From: Kathryn Thompson <kate@katepics.com>
To: <GCDExpPlan@uc.usbr.gov>
Date: Wed, Feb 28, 2007 4:42 PM
Subject: LTEP concerns

As a concerned citizen who loves Grand Canyon. I am writing to you about the Long Term Experimental Plan for Glen Canyon Dam and the downstream resources.

I believe this EIS should meet the intent of the Grand Canyon Protection Act, and not just be convenient for power operations to make more profits. This plan should rely on previous results of science to steer decision making. If science is not providing answers, then continued experiments and repeat experiments should be implemented. We can not afford to put management decisions in place until the science backs it up.

I believe that the NPS should serve as one of the lead agencies for this EIS process. It is, after all, our National Park and her resources that are impacted by Glen Canyon Dam and its operations.

LTEP alternatives must be scientifically credible with well-defined scientific hypotheses. It seems like the alternatives presented are designed to meet Power interests only. They are not science-based and are not well-researched with full approval from scientific stakeholders. Please consider that LTEP should be based on an ecosystem approach that builds on what we know already. To simply fit science to a plan that favors Power goes against the Grand Canyon Protection Act and the whole reason that Grand Canyon Monitoring and Research Center was implemented. I support that my tax dollars help to fund the science that helps to understand the Grand Canyon ecosystem along the River corridor.

I believe that the river corridor needs renewal every so often. Therefore the Beach Habitat Building Flows are critical to rejeuvenating the sediment resource that helps to rebuild campsites, protect archeological sites, and maintain native fish habitat, among helping many other resources. I have information that the River received a more than adequate sediment trigger from influx of the Paria, and yet a BHBF is not going to be delivered. This defies the Grand Canyon Protection Act and Adaptive Management, and so our tax dollars are going to waste. The money is there for sediment-triggered BHBFs.

Finally, after reviewing comments delivered by Grand Canyon River Guides, Inc., I fully support their well-researched comments. I hope that better alternatives will be developed for this new EIS.

Sincerely,

Kathryn Thompson

Kate Thompson Photography
http://katepics.com
PO Box 1611

Dolores, CO 81323
970 882-1221

From: "Kathy Urffer" <kathyurf@gmail.com>
To: <GCDExpPlan@uc.usbr.gov>
Date: Tue, Feb 20, 2007 1:51 PM
Subject: EIS Glen Canyon Dam

Mr. Rick Gold
Regional Director, Bureau of Reclamation
Upper Colorado Region
Attn: UC-402
125 South State Street
Salt Lake City, Utah 84138-1147

Dear Mr. Gold,

I appreciate the opportunity to submit the following comments for the Environmental Impact Statement on the Long-term Operations for the Future Operation's of Glen Canyon Dam. The river ecosystem in Grand Canyon National Park has suffered over the past forty years due to the operations of Glen Canyon Dam, and it is vital that the problem be considered with a new perspective.

For the current exercise to yield any meaningful outcome, the EIS process must be reconceived incorporating the following:

1. Restructuring the focus of the EIS on the recovery.

The principal objective should not be the long-term operation of Glen Canyon Dam, but the ingredients necessary to bring about the recovery and preservation of endangered species within the Colorado River corridor of Grand Canyon National Park. While such objectives may not be mutually exclusive, this has yet to be proven, and as such, one should precede the other. The focus must first address the ingredients necessary to restore the natural process to Grand Canyon's river ecosystem, and secondly how, and at what costs, can the Glen Canyon Dam/Lake Powell reservoir system be operated in order to achieve this. The restoration ingredients must include:

- The return of river flows consistent with the Colorado River's natural discharge into Grand Canyon.
- The re-establishment of a water temperature regime consistent with seasonal temperature variations of the Colorado River in Grand Canyon.
- The re-establishment of sediment inputs into Grand Canyon consistent with the amount that would be received in a dam-free environment.
- The elimination of non-native species, which have taken hold in the artificial riverine environment created by Glen Canyon Dam operations.

2. Evaluate the Decommissioning of Glen Canyon Dam.

The no-dam alternative must be evaluated as one means of achieving the restoration of the natural process necessary for the recovery and preservation of endangered species in Grand Canyon's river corridor. The no-dam alternative provides a valuable base line from which to evaluate other operational alternatives. Additionally, in light of the climate and human induced changes affecting flows into Lake Powell, and thus the viability of the dam to meet perceived water supply and hydroelectric

benefits, BoR has additional incentive to examine a decommissioning or no-dam alternative consistent with the Council on Environmental Quality guidelines.

3. Replace the Working Groups of the Adaptive Management Program.

Despite being given specific instructions twelve years ago as outlined in the 1995 EIS on Glen Canyon Dam operations, the Glen Canyon Dam Adaptive Management Program (AMP) has failed to deliver in almost every aspect, causing Grand Canyon's river ecosystem to endure further damage. Many of AMP's failings were spelled out in the United State's Geological Survey's SCORE Report of October 2005. It was precisely these failings that have compelled BoR to undertake this new EIS process as part of its settlement agreement with environmental groups last year. Absent any structural changes to the AMP, any recommendations coming out of this EIS process will be of little value, as there are no mechanisms to ensure they won't be ignored as were those from the EIS twelve years ago.

Dominated by water supply and hydroelectric power interests, it's not surprising that the AMP has been intransigent toward addressing the true needs for endangered species recovery in Grand Canyon. Scientific, not political and commercial interests, should be the sole advisors to the Secretary of Interior on how Grand Canyon's river ecosystem should be studied, monitored and managed consistent with the recovery objectives.

Therefore, the AMP should be replaced by an open source and independent body of research and advisory scientists, where the monitoring and research data are consistently and thoroughly peer-reviewed prior to formulating any recommendations to the Secretary of Interior.

There are plenty of substitutes to achieve the benefits Glen Canyon Dam may provide, but there will never be another Grand Canyon. It's time for the BoR to stop thwarting the public's interest to protect it.

Sincerely,
Kathy Urffer
38 Chapin Street, #1
Brattleboro, VT 05301
kathyurf@gmail.com

1001 S. Valley View Boulevard
Las Vegas, Nevada 89153
(702) 258-3107
(702) 822-8431 facsimile

Southern Nevada Water Authority

Fax

To	Fax Number
Mr. Rick L. Gold U.S. Bureau of Reclamation	(801) 524-3858

FROM: Kay Brothers

DATE: 2/28/2007 9:16 AM

Original sent via U.S. Post.

NO. OF PAGES (including cover sheet): Two (2)
Please call Darlene Fanizzi at (702) 258-3107 if all pages are not received.

Southern Nevada Water Authority

ADMINISTRATIVE OFFICE
1001 S. Valley View Blvd.
Las Vegas, NV 89153
Main 702/258-3939
Fax 702/258-3268

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snwa.com

February 22, 2007

Mr. Rick L. Gold
Regional Director
U.S. Bureau of Reclamation
Upper Colorado Region
Attention: UC-402
125 South State Street
Salt Lake City, Utah 84138-1147

Dear Mr. Gold:

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT FOR THE ADOPTION OF A LONG-TERM EXPERIMENTAL PLAN FOR THE FUTURE OPERATION OF GLEN CANYON DAM AND OTHER ASSOCIATED MANAGEMENT ACTIVITIES

The Southern Nevada Water Authority (SNWA) appreciates the opportunity to provide scoping comments on the proposed Environmental Impact Statement (EIS) for the Adoption of a Long-Term Experimental Plan for the Future Operation of Glen Canyon Dam and Other Associated Management Activities (LTEP). The SNWA represents seven-member water and wastewater agencies in southern Nevada including the Big Bend Water District, the City of Boulder City, the City of Henderson, the City of Las Vegas, the City of North Las Vegas, the Clark County Water Reclamation District, and the Las Vegas Valley Water District. The SNWA's mission is to manage the water resources of southern Nevada and develop solutions that will ensure adequate future water supplies for the Las Vegas Valley.

According to the scoping letter for the project dated January 19, 2007, the purpose of the LTEP will be to increase understanding of the ecosystem downstream and to improve and protect downstream resources. We suggest the EIS for the LTEP address, as appropriate, relevant issues related to water quality, the relationship of any proposed changes to operations as part of the Lower Colorado River Basin Shortage Guidelines the consultation process for the Annual Operating Plan, and any projected changes to electric power generation rates and revenues.

Thank you for the opportunity to comment. If you have any questions regarding these comments, please contact Janet Monaco, Division Manager, or Holly Cheong, Environmental Planner II, at (702) 862-3752.

Sincerely,

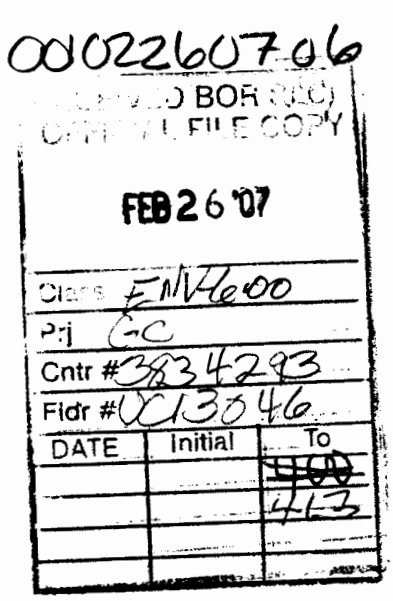
Kay Brothers

Kay Brothers
Deputy General Manager
Engineering and Operations

KB:HC:lmv

cc: Bill Rinne, Director - Surface Water Resources

ORIGINAL



WILDLANDS COUNCIL

Regional Director, Bureau of Reclamation
Upper Colorado Region, Attn: UC-402
125 S. State St.
Salt Lake City, UT 84318-1147
(801) 524-3858
GCDExpPlan@uc.usbr.gov

February 20, 2007

Regional Director:

Thank you for the opportunity to provide you with scoping comments on your Environmental Impact Statement (EIS) to develop a Long-Term Experimental Plan (LTEP) for Glen Canyon Dam. We understand the purpose of this EIS is to develop a comprehensive scientific plan to improve and protect important downstream resources which have been in decline. Creating a long-term science plan through a National Environmental Policy Act process is unique in America's history. Never before has the American public been called upon to collectively agree on the design and details of a large, long-term, expensive ecosystem science plan. Such an activity is typically the purview of senior scientists, not of the lay public. Therefore, as an organization of scientists and informed citizens, we are deeply concerned that this EIS have sufficient technical credibility to allow us to learn and care for one of the world's most renown river ecosystems.

As long-term researchers in the Colorado River ecosystem, and as strong advocates for improved science in the Glen Canyon Dam Adaptive Management Work Group, we provide several comments that may help refine the scoping process and alternatives defined for this draft EIS.

1) The EIS should be focused on development of alternatives that meet the intent of the 1992 Grand Canyon Protection Act to preserve and improve Park values both downstream and upstream of the dam. Downstream Park values include: native species and ecosystems, sediment, cultural resources, and visitor use. Upstream values are similar, but have not been identified or clearly articulated, an exercise we recommend be taken up by the AMWG during the course of this scoping process. The plan alternatives selected should be in compliance with legal responsibilities for protection of endangered species, as well as those for the preservation of cultural resources in Grand Canyon.
2) The LTEP should be based on an ecosystem approach that builds on previously published peer-reviewed scientific information, not on agency biases and the desires of lobbying interests.
3) LTEP alternatives must be scientifically credible, with well-defined scientific hypotheses, efficient and effective tests of those hypotheses including the use of scientific controls,

and a commitment to using the information to improve Colorado River ecosystem management. Towards that end, the AMWG has engaged in a 12 month science planning effort to develop a long-term science plan. That planning process failed because special interest groups within the AMWG presented wish-list schemes for dam flows that lacked scientific credibility. A credible long-term science plan should have the following elements:

a) Clearly defined hypotheses (these are likely to include flow and flow variability on hourly to interannual time scales, water temperature, natural and augmented sediment transport, and other non-flow options).
b) Clearly defined methods for reliably testing those hypotheses, and guarantees for rapid, accurate data analyses and reporting.
c) Conduct of the work by independent experts, not necessarily just the U.S. Geological Survey staff of the Grand Canyon Monitoring and Research Center (see below).
d) Adequate consideration of scientific controls. At present, the AMWG has ignored the issue of scientific controls, blurring the effects of dam operations and natural variability on resource conditions. The appropriate scientific controls will depend on the hypothesis being tested.
e) Validated and practical recommendations for improving Colorado River ecosystem science and management.
f) Thorough review of the design and outcome of each experiment by independent experts.
g) Publication in the peer-reviewed literature, rather than in government "gray literature".
h) Presentation of results in book form and at national and international symposia.
i) A firm commitment on the part of the managing agencies to incorporate the information into the adaptive management program.

In relation to 2c above, neither the U.S. Geological Survey's Grand Canyon Monitoring and Research Center nor the AMWG's Science Advisers have the staff nor the capability of designing this long-term plan. This was demonstrated by the involvement of both groups in the failed, year-long science planning process. Therefore, we recommend that an independent panel of river ecosystem specialists be convened to design this plan. That panel of experts should be selected by the AMP Science Advisors with the assistance of the Ecological Society of America and/or the National Research Council in a timely manner (i.e., during the development of the EIS alternatives).

4) The LTEP options should incorporate:
   a) Broader socio-economic analyses: economic analyses should not be restricted to the impacts to hydropower, but should also include the impacts to other resources including recreation, local economies, and non-market values.
   b) Include BHBF's as a common element to all LTEP alternatives, utilizing sediment triggers with specified frequency based on best scientific data.
   c) Test the need for development of a Selective Withdrawal Device for water temperature control as a common element to all alternatives. We strongly recommend small-scale testing of temperature hypotheses in controlled settings

prior to construction of the SWD: several million dollars of tests may greatly refine the design and use of this costly structure. Such testing has repeatedly been recommended by independent scientists involved in symposia on the use of such a device.

Again, thank you for the opportunity to comment on scoping issues for this EIS. Given our scientific capability and interest in improving management of this ecosystem, we are available for further consultation, should Reclamation so desire.

Kelly Burke

Kelly Burke, Executive Director

From: "Kelly Burke" <kelly@grandcanyonwildlands.org>
To: <GCDExpPlan@uc.usbr.gov>
Date: Thu, Jan 4, 2007 1:41 PM
Subject: **please update Grand Canyon Wildlands Council** address

Please Note: The request for Glen Canyon Dam Experimental Plan public comment came addressed to

Pam Hyde
Grand Canyon Wildlands Council
P.O. Box 1424
Flagstaff, AZ 86002

!! Please remove this address from your list. It is a personal mailbox for a completely different person.

Mail should be sent to

Ms. Kelly Burke
Grand Canyon Wildlands Council
P.O. Box 1594
Flagstaff, AZ 86002

AMWG and TWG mail goes to:
Dr. Larry Stevens
P.O. Box 1315
Flagstaff, AZ 86002

Thank you so much,
Kelly Burke

From: <kijohnson1@aol.com>
To: <GCDExpPlan@uc.usbr.gov>
Date: Fri, Jan 26, 2007 10:01 AM
Subject: Re: Take Action: Save Grand Canyon from Glen Canyon Dam

Mr. Rick Gold
Regional Director, Bureau of Reclamation
Upper Colorado Region
Attn: UC-402
125 South State Street
Salt Lake City, Utah 84138-1147

Dear Mr. Gold,

Thank you for the opportunity to submit the following scoping comments for the Environmental Impact Statement on the Long-term Operations for the Future Operation's of Glen Canyon Dam. The river ecosystem in Grand Canyon National Park has suffered immensely over the past forty years due to the operations of Glen Canyon Dam, and it's vital that a fresh look at the problem be undertaken. I have concerns, however, that the EIS as envisioned is destined to fail in this regard unless a number of critical issues are addressed.

First, I would like to express my tremendous dismay with the Department of Interior's mishandling of the recovery efforts in Grand Canyon National Park over the past 40 years, and that the information presented so far by the Bureau of Reclamation indicates that this EIS promises more of the same.

While new plans for ongoing investigation and experimentation can be beneficial, they are useless amidst a backdrop where the commitment to implement those plans is virtually non-existent. We've already experienced this with the completion of the first EIS twelve years ago, and there's nothing outlined in the purpose and need for this EIS process to indicate things will be any different once this process concludes. For this exercise to yield any meaningful outcome, the EIS process must be reconceived incorporating the following:

1. Restructuring the focus of the EIS on the recovery.

The principal objective should not be the long-term operation of Glen Canyon Dam, but the ingredients necessary to bring about the recovery and preservation of endangered species within the Colorado River corridor of Grand Canyon National Park. While such objectives may not be mutually exclusive, this has yet to be proven, and as such, one should precede the other. The focus must first address the ingredients necessary to restore the natural process to Grand Canyon's river ecosystem, and secondly how, and at what costs, can the Glen Canyon Dam/Lake Powell reservoir system be operated in order to achieve this. The restoration ingredients must include:

The return of river flows consistent with the Colorado River's natural discharge into Grand Canyon.
The re-establishment of a water temperature regime consistent with seasonal temperature variations of the Colorado River in Grand Canyon.
The re-establishment of sediment inputs into Grand Canyon consistent with the amount that would be received in a dam-free environment.
The elimination of non-native species, which have taken hold in the artificial riverine environment created by Glen Canyon Dam operations.

2. Evaluate the Decommissioning of Glen Canyon Dam.

The no-dam alternative must be evaluated as one means of achieving the restoration of the natural process necessary for the recovery and preservation of endangered species in Grand Canyon's river

corridor. The no-dam alternative provides a valuable base line from which to evaluate other operational alternatives. Additionally, in light of the climate and human induced changes affecting flows into Lake Powell, and thus the viability of the dam to meet perceived water supply and hydroelectric benefits, BoR has additional incentive to examine a decommissioning or no-dam alternative consistent with the Council on Environmental Quality guidelines.

3. Replace the Working Groups of the Adaptive Management Program.

Despite being given specific instructions twelve years ago as outlined in the 1995 EIS on Glen Canyon Dam operations, the Glen Canyon Dam Adaptive Management Program (AMP) has failed to deliver in almost every aspect, causing Grand Canyon's river ecosystem to endure further damage. Many of AMP's failings were spelled out in the United State's Geological Survey's SCORE Report of October 2005. It was precisely these failings that have compelled BoR to undertake this new EIS process as part of its settlement agreement with environmental groups last year. Absent any structural changes to the AMP, any recommendations coming out of this EIS process will be of little value, as there are no mechanisms to ensure they won't be ignored as were those from the EIS twelve years ago.

Dominated by water supply and hydroelectric power interests, it's not surprising that the AMP has been intransigent toward addressing the true needs for endangered species recovery in Grand Canyon. Scientific, not political and commercial interests, should be the sole advisors to the Secretary of Interior on how Grand Canyon's river ecosystem should be studied, monitored and managed consistent with the recovery objectives.

Therefore, the AMP should be replaced by an open source and independent body of research and advisory scientists, where the monitoring and research data are consistently and thoroughly peer-reviewed prior to formulating any recommendations to the Secretary of Interior.

We're closing in on 50 years of ecological destruction in Grand Canyon National Park due to the operations of Glen Canyon Dam. For much of this time the public has been asking that this be remedied. We continue to lose valuable time and species as the BoR procrastinates and resists the public's mandate to put the resource first. While there are plenty of substitutes to achieve the benefits Glen Canyon Dam may provide, there will never be another Grand Canyon. It's time for the BoR to stop thwarting the public's interest to protect it.

Sincerely,

Mr. Kim Johnson
PO Box 1117
Wilson, Wyoming USA
83014-1117

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RECLAMATION
Managing Water in the West

U.S. Department of the Interior
Bureau of Reclamation

— *Comment Card* —

COMMENTS DUE BY WEDNESDAY, FEBRUARY 28, 2007

PLEASE PRINT

Date: 12/30/06

Name: Kirk Cunningham Title (if applicable) :

Telephone: 303-939-8579 Fax:

Organization/Business (if applicable): E-Mail: KMCunnin@gmo.com

Address: 977 7th St

City: Boulder State: CO Zip: 80302

☒ Yes, I would like to be added to your mailing list: E-Mail ☒ US Mail ☐

The Bureau of Reclamation is seeking public comment on the adoption of a Long-Term Experimental Plan for the future operation of Glen Canyon Dam and other associated management activities. Your input on the scope of the project and the issues and alternatives that should be analyzed is greatly appreciated. Please write legibly.

I am most interested in the technical feasibility (if any) of by-passing sediment to below the Glen Canyon Dam, as well as increasing water temperature.

Please submit your comments in the space provided, fold the card in half, tape the edges, and mail the completed card back to:
Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State Street, Salt Lake City, Utah 84138-1147.
Comments must be received by February 28, 2007.

Kristin Huisinga
301 Ash Lane
Flagstaff, AZ 86004
(928) 527-1306

27 February 2007

Regional Director
Bureau of Reclamation
Upper Colorado Region
Attention: UC-402
125 South State Street
Salt Lake City, UT 84318-1147

To the Regional Director,

Thank you for accepting these comments on the EIS for the long-term experimental plan for the future operation of Glen Canyon Dam. My life is deeply intertwined with the Colorado River Ecosystem, as I not only work as a professional river guide, I am also a professional botanist in the region and have worked with several Native American tribes who consider the Grand Canyon home. Understanding many viewpoints, I comment on the EIS as an independent person, without affiliation to any company or government agency.

Focus the EIS so that all alternatives meet the need to preserve the ecosystem downstream of Glen Canyon Dam, as defined in the Grand Canyon Protection Act.
Specific values to include are: native species and habitats, sediment, archaeological sites and other cultural sites, endangered species, cultural properties, and recreational use.

The Long-term Experimental Plan (LTEP) should be based on past science and should use an adaptive ecosystem management approach. There have been significant scientific findings that will inform the creation of a LTEP beginning at least during the Glen Canyon Environmental Studies (GCES) phase and continuing into the present. For example, information gained during the 1996 and 2004 experimental floods should guide a plan for ongoing Beach Habitat Building Flows. The LTEP should be based on science already conducted. We do not need a reason to implement fifteen more science projects. Use what we have.

All alternatives should include a well-designed research plan for Beach Habitat Building Flows. The Grand Canyon ecosystem below Glen Canyon Dam is in serious needs of regular high-volume flows not only to deposit incoming sediment, but also to renew terrestrial habitat and to provide a mechanism for cleaning beaches that are heavily impacted by

commercial tours. The research plan should include recommendations from sediment scientists that state that Beach Habitat Building Flows will be conducted when a sediment trigger is met. These flows not only provide ongoing opportunity for learning from scientific experiments, they also offer an essential renewal to a river system that has historically been maintained through flooding events.

The alternatives should explore a range of Beach Habitat Building Flows that include size, timing, and flow dynamics following the experiment. While Beach Habitat Building Flows have been restricted below 45,000 cfs, when basin hydrology allows, larger flows should be considered. This should be clearly defined. Timing of flows should be carefully investigated so that impact to cultural resources (such as archaeological sites), natural resources (such as breeding birds), and physical resources is minimized. Flow guidelines following an experimental flow should be well-defined. For example, to follow a Beach Habitat Building Flow with a high fluctuating flow does not make sense because while beaches were built, they are quickly eroded by high fluctuations. A well-defined plan is greatly needed.

Incorporate a plan for testing the effects of Seasonally Adjust Steady Flows that mimic pre-dam conditions. Specifically, incorporate Option B from the Adaptive Management Program experimental flow plan into the EIS alternatives. This option offers a way to understand how the ecosystem can be optimally balanced with hydropower demands.

Expand economic analyses to include a variety of impacts. Economic analyses have thus far been limited to impacts to hydropower alone. Many other economic variables exist and should be considered including each alternative's impact to local economy, recreation, and non-market values.

All alternatives should address the drought in the region. The LTEP should anticipate impacts from the impacts of drought. Glen Canyon Dam is in a region that experiences regular drought and this variable should not be excluded from a long-term plan.

Consult with tribal governments in the planning stages. Historically, managers and policy makers consult with tribal representatives AFTER a plan has already been established. Set a precedent and talk to the tribes about their concerns. What concerns can be included in the range of alternatives? This makes for a smoother tribal consultation process.

Thank you for considering my comments.

Sincerely,

Kristin Huisinga

From: "Kurt Matthews" <MATTHEWSK@bouldercolorado.gov>
To: <GCDExpPlan@uc.usbr.gov>
Date: Tue, Jan 9, 2007 9:19 AM
Subject: Grand Canyon EIS

Please consider the following points in your EIS.

Focus this EIS on developing alternatives that meet the intent of the Grand Canyon Protection Act to preserve and improve park values downstream of the dam. Park values include native species and ecosystems, sediment, cultural resources and visitor use *values that mean so much to all of us and to future generations. The National Park Service (NPS) should serve as a joint lead agency for this EIS process. National Park values and resources downstream of Glen Canyon Dam are strongly influenced by dam operations.LTEP alternatives must be scientifically credible with well-defined scientific hypotheses * don't just develop a plan and then try to fit the science to it.The LTEP should be based on an ecosystem approach that builds on what we already know. LTEP options should be in compliance with legal responsibilities for protection of endangered species, as well as those for the preservation of cultural resources in Grand Canyon. The LTEP options should incorporate broader socio-economic analyses. In other words, the economic analyses should not be restricted to the impacts to hydropower, but should also include the impacts to other resources including recreation, local economies, and non-market values. Give us the whole picture * not just a part of it. **Conduct a Beach Habitat Building Flow in early 2007 in** order to provide urgently needed data to inform this Long Term Experimental Plan. Include BHBF's as a common element to all LTEP alternatives, utilizing sediment triggers with specified frequency based on best scientific data.Support the development of a Selective Withdrawal Device for temperature control and improved water quality as a common element to all alternatives. Thank-you,

Kurt Matthews
10557 Irving Court
Westminster, CO 80031

From: kyle harris <scorpiondragonwarrior@yahoo.com>
To: <GCDExpPlan@uc.usbr.gov>
Date: Fri, Feb 23, 2007 8:52 AM
Subject: when does it start?

i am wondering when this starts so i can help?

Bored stiff? Loosen up...
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From: "L. Fisher" <savethedesert@yahoo.com>
To: <GCDExpPlan@uc.usbr.gov>
Date: Tue, Jan 30, 2007 10:55 AM
Subject: stop the nonsense

Please stop "studying" the operation of Glen Canyon Dam. At best it needs to be decommissioned and at least drain the thing and start over. Even Barry Goldwater, the ultra-conservative, knew that it was a mistake. Get rid of it.

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From: "Laura Chartrand" <lchartrand@westernroundtable.com>
To: <GCDExpPlan@uc.usbr.gov>
Date: Wed, Feb 28, 2007 3:29 PM
Subject: Long-term Experimental Plan for Operation of Glen Canyon Dam

Dear Mr. Rick L. Gold:

Please find comments from the Western Business Roundtable regarding the Long-Term Experimental Plan for Operation of Glen Canyon Dam and Other Associated Management Activities.

Thank you.

Laura Chartrand

Policy Specialist

Policy Communications, Inc.

lchartrand@policycom.com

(303)577-4617

CC: <hpropst@policycom.com>, "'Dave Mazour'" <dmazour@tristategt.org>

WESTERN BUSINESS ROUNDTABLE

February 28, 2007

Mr. Rick L. Gold
Regional Director
Bureau of Reclamation
Upper Colorado Region
Attention: UC-402
125 South State Street
Salt Lake City, UT 84318-1147

Dear Mr. Gold:

The Western Business Roundtable ("Roundtable") respectfully submits the following comments regarding the Bureau of Reclamation's ("Reclamation") notice of intent to prepare of an Environmental Impact Statement ("EIS") on the adoption of a Long-Term Experimental Plan for the operation of Glen Canyon Dam and other associated management activities.

Our membership is comprised of a coalition of CEOs and senior executives of corporations and organizations representing a broad cross-section of Western business interests – including those engaged in construction, manufacturing, mining, electric power generation and oil and gas exploration and development. Because our companies and their employees live and work in the West, we understand the importance of sensible environmental policy and economic development in the Western states.

We appreciate the opportunity to comment on the scope of the analysis for the draft environmental impact statement. This issue has tremendous macro-economic, consumer pocketbook, environmental and national security implications.

ROUNDTABLE'S POSITION

The Roundtable applauds Reclamation's efforts to work through the Glen Canyon Adaptive Management Work Group process as the EIS is developed. In developing any program of long-term experimentation, key to the process and results will be a robust set of testable hypotheses that are consistent with the objectives of the program. The included hypotheses should be focused on the objectives articulated by the Adaptive Management Work Group at its December 2006 meeting. In addition, Reclamation should take into consideration the information discussed and developed by the Technical Work Group at its November 2006 meeting.

The primary purpose of Glen Canyon Dam is water conservation and storage. In addition to the primary purpose of water delivery, another purpose is to generate hydroelectric power. The Roundtable supports maximization of the environmentally-sound development

Western Business Roundtable | 350 Indiana Street, #640 | Golden, Colo. 80401 | 303-216-9278 f: 303-496-0334
info@westernroundtable.com | www.westernroundtable.com

The opinions expressed in this letter represent the views of a majority of Roundtable Members, but not necessarily all of our members.

of hydroelectric power as a means to reduce our nation's dependence on imported fuels from politically unstable areas of the world.

SPECIFIC ROUNDTABLE RECOMMENDATIONS

1. **The EIS process should employ the best science and data to inform decision-making.**

   We understand that the EIS is an effective means to ensuring the environmentally-sound continuance of the many purposes of the Glen Canyon Dam. We applaud Reclamation's efforts to prevent duplicative processes by intending to tier from earlier NEPA compliance documents.

2. **Input from affected entities should be given proper weight on the EIS**

   The EIS process requires that Reclamation consider the comments of interested and affected agencies, organizations and individuals. The Roundtable believes that public input is integral and that agencies need to give more consideration to those comments from entities that will actually be affected by a decision.

3. **The EIS's proposed purpose and need for action should clearly be one that preserves the purposes for which Glen Canyon Dam was constructed, while meeting environmental and science objectives to the extent practicable.**

   The production of hydropower is an authorized purpose of the Glen Canyon Dam. This EIS will tier off of previous environmental compliance documents, including the 1996 Record of Decision. That decision reflected a preferred alternative that would permit recovery and long-term sustainability of downstream resources, while limited hydropower capability and flexibility *only to the extent necessary* to achieve recovery and long-term sustainability. Increasing scientific understanding of the ecosystem downstream from the Glen Canyon Dam should be a by-product.

4. **The EIS should include consideration of a suite of hypotheses to be developed and implemented.**

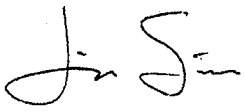
   The suite of hypotheses should include those that are consistent with the objectives of the program, including:

   - Those articulated by the Adaptive Management Work Group at its December 2006 meeting;
   - Information discussed and developed by the Technical Work Group in November 2006; and
   - Those recommended by the various users of the Glen Canyon Dam, including power customers and recreational users, with particular focus on the authorized purposes of the Glen Canyon Dam, including the generation of hydropower.

CONCLUSION

On behalf of the many member organizations of the Western Business Roundtable, thank you for the opportunity to comment on this important policy initiative, which is so important to the continued vitality of the West.

Sincerely,



Jim Sims
President and CEO

The Roundtable is a non-profit business trade association comprised of CEOs and senior executives of organizations doing business in the Western United States. Our member companies are involved in a broad range of industries, including agricultural products, accounting, chemicals, coal, construction and construction materials, conventional and renewable energy production, energy services, engineering, financial services, internet technologies, manufacturing, mining, oil and gas, pharmaceuticals, pipelines, telecommunications, and public and investor-owned utilities. We work for a common sense, balanced approach to economic development and environmental conservation, and we support public policies that encourage economic growth, opportunity and freedom of enterprise.

From: "CREDA" <creda@qwest.net>
To: <GCDExpPlan@uc.usbr.gov>
Date: Thu, Feb 22, 2007 10:04 AM
Subject: LTEP EIS Scoping Comments

Please see attached scoping letter and advise that it has been received. Thanks.

Leslie James

CREDA

Colorado River Energy Distributors Association

ARIZONA
Arizona Municipal Power Users Association

Arizona Power Authority

Arizona Power Pooling Association

Irrigation and Electrical Districts Association

Navajo Tribal Utility Authority
(also New Mexico, Utah)

Salt River Project

COLORADO
Colorado Springs Utilities

Intermountain Rural Electric Association

Platte River Power Authority

Tri-State Generation & Transmission
Association, Inc.
(also Nebraska, Wyoming, New Mexico)

Yampa Valley Electric
Association, Inc.

NEVADA
Colorado River Commission
of Nevada

Silver State Power Association

NEW MEXICO
Farmington Electric Utility System

Los Alamos County

City of Truth or Consequences

UTAH
City of Provo

South Utah Valley Electric Service District

Utah Associated Municipal Power Systems

Utah Municipal Power Agency

WYOMING
Wyoming Municipal Power Agency

Leslie James
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February 22, 2007

Regional Director
Bureau of Reclamation
Upper Colorado Region
Attention: UC-402
125 South State Street
Salt Lake City, Utah 84318-1147

VIA EMAIL: GCDExpPlan@uc.usbr.gov

The Colorado River Energy Distributors Association (CREDA) appreciates the opportunity to provide comments during the Bureau of Reclamation's (Bureau) scoping of the Long-Term Experimental Plan for the Operation of Glen Canyon Dam and Other Associated Management Activities (LTEP) Environmental Impact Statement (EIS) process (71 Fed.Reg 74556-74558, December 12, 2006), which followed Notice published November 6, 2006 (71 Fed.Reg 64982-64983). In the event there is an extension of the comment period, CREDA may supplement these comments at an appropriate later date.

CREDA Background

CREDA's mission is "To preserve and enhance the availability, affordability, and value of Colorado River Storage Project facilities while promoting responsible stewardship of the Colorado River System." CREDA is a non-profit, Colorado corporation, also authorized to do business in Arizona, which was formed in 1978 as an association of non-profit entities who are long-term contractors for resources of the Colorado River Storage Project (CRSP). CREDA represents its members by working with the Bureau and the Western Area Power Administration (WAPA) regarding issues related to the CRSP. CREDA members serve over four million consumers in six states: Arizona, New Mexico, Nevada, Colorado, Utah and Wyoming. CREDA members include joint action agencies, state agencies, political subdivisions, tribal utility authorities, municipalities, rural electric cooperatives and irrigation and electrical districts. CRSP contractors pay all the power costs of the CRSP, which includes construction (with interest), operation, maintenance and replacements, transmission, environmental and approximately 95% of the irrigation costs. CREDA has also been a representative of contractors who purchase federal power on the Glen Canyon Dam Adaptive Management Work Group (AMWG) since its inception. CREDA and its members have a direct and specific interest in this process.

CRSP Background

In 1956, the CRSP was initiated to provide storage facilities for the Upper Basin states so that they could meet their obligations under the Colorado River Compact. The CRSP was authorized in the Colorado River Storage Project Act of 1956 (P.L. 485, 84th Cong., 70 Stat. 50), as a multi-purpose federal project. The Act defined project purposes as flood control, water storage for irrigation, municipal and industrial purposes and generation of electricity. The CRSP includes hydropower generation facilities at the Aspinall Unit (three dams with hydropower facilities), Flaming Gorge Dam and Glen Canyon Dam. Glen Canyon Dam is the largest hydropower generating feature of the CRSP, comprising approximately 70% of the generation resource of the Salt Lake City Area Integrated Projects (SLCA/IP).

Glen Canyon Dam

Glen Canyon Dam, located near Page, Arizona, includes eight generators, with the nameplate generating capacity of 1,296,000 kW[1] and reservoir storage capacity of 27,000,000 acre feet (to elevation 3,700)[2]. Lake Powell and Glen Canyon Dam are critical to the workings of the Law of the River, the Colorado River Compact and the Upper Colorado River Basin Compact, particularly in times of drought.

The Bureau currently operates Glen Canyon Dam to allow for hydrologic conditions, water rights, minimum stream flows, powerplant capacities, and reservoir elevation goals. "In addition to the primary purpose of water delivery, another function of Glen Canyon Dam is to generate hydroelectric power".[3] However, that function has been significantly constrained since the early 1990's, with the initiation of interim operating criteria, and continuing with the October 1996 Record of Decision (ROD)[4] which called for a Modified Low Fluctuating Flow (MLFF) operating regime, which ultimately resulted in the constraint of hydropower generation levels (maximum and minimum generation/flow and limits on up and down ramps) in favor of downstream concerns. Based on research by the Grand Canyon Monitoring and Research Center (GCMRC), it also appears that a downward trend in the humpback chub population may coincide with initiation of interim operating criteria and ROD flows.[5]

Proposed Purpose and Need for Action

The Council on Environmental Quality (CEQ) Regulations require that the purpose and need statement of an EIS state the proposed action, the purpose of the proposed action, and specify the underlying need to which the agency is responding in proposing the alternatives, including the proposed action.[6]

CREDA is concerned about the proposed purpose and need for action statement. As required by the 1956 CRSP Act, the production of hydropower is an authorized purpose of this federal project. This EIS is tiering off of previous environmental compliance, including the 1996 Record of Decision. That decision included the selection of the existing operational alternative which would achieve an appropriate "balance", so that the operation of Glen Canyon Dam would

[1] http://www.usbr.gov/power/data/sites/glencany/glencany.html
[2] http://www.usbr.gov/dataweb/dams/az10307.htm
[3] 71 Fed.Reg. 74558, December 12, 2006
[4] http://www.usbr.gov/uc/rm/amp/pdfs/sp_appndxG_ROD.pdf
[5] SCORE Report, USGS Circular 1282 (Oct. 2005), page 45, Figure 12
[6] 40 CFR § 1502.13.

conform to the direction given in the Grand Canyon Protection Act of 1992 while remaining in compliance with other legal mandates; ". . . to balance competing interests and to meet statutory responsibilities for protecting downstream resources and producing hydropower . . ."[7]. The concept of "balance" was integral to the selection of this alternative and is repeated in several related documents: "The goal of selecting a preferred alternative was not to maximize benefits for the most resources, but rather to find an alternative dam operating plan that would permit recovery and long-term sustainability of downstream resources while limiting hydropower capability and flexibility *only to the extent necessary* to achieve recovery and long-term sustainability." (Emphasis added).[8] "Learning" or "increasing scientific understanding of the ecosystem downstream from Glen Canyon Dam" should be secondary, or a byproduct of the efforts of the Secretary to meet legal mandates while "improving and protecting important downstream resources", which includes the generation of hydropower *to the maximum extent practicable,* in accordance with the CRSP Act and the Law of the River. ***It is imperative that the proposed action clearly be one that preserves the purposes for which Glen Canyon Dam was constructed, while meeting environmental and science objectives to the extent practicable.***

Development of Alternatives

At the January 2007 scoping meetings, the Bureau indicated that it would involve the AMWG in the alternative development process and the Federal Register notice indicates "the range of alternatives ..will be developed following recommendations provided by the AMWG..." (from the December 5-6, 2006 meeting). CREDA supports this approach, but may not necessarily support all alternatives forwarded by the AMWG. In developing such range of alternatives, the Bureau should also take into consideration the information discussed and developed by the Technical Work Group (TWG) at its November 8-9, 2006 meeting, specifically with regard to its recommendations and ranking of the alternatives. It is noteworthy that a majority of those in attendance at the November TWG meeting ranked the alternatives which provided a benefit to hydropower generation as well as other downstream resources significantly higher than other alternatives which negatively impacted hydropower generation. ***Under NEPA, the Bureau must recognize the benefits of hydroelectric power and assess the adverse impacts to this project purpose from any proposal or alternative.***[9]

The Data Quality Act requires agencies "to ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements" and to "identify any methodologies used" and "make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement."[10] While analyzing and developing potential alternatives, scientific analysis that indicates "uncertainty" should be treated as just that, and additional "value judgments" attached to uncertainty such as "possibly positive" or "possibly negative" should be discounted. "Such value-laden words should not be used to convey scientific information because they imply a preferred ecological state, a desired condition, a benchmark, or a preferred class of policy options. Doing so is not science, it is policy advocacy."[11] If there is

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[7] Record of Decision, Operation of Glen Canyon Dam Final Environmental Impact Statement, page 1.
[8] Ibid, Section VII. Basis for Decision.

[9] 42 U.S.C. § 4321.
[10] 40 C.F.R. §1502.24.
[11] Lackey, Robert T., "Science, Scientists, and Policy Advocacy", Conservation Biology Volume 21, no. 1, page 14.

clear scientific data supporting a statement, it should be considered, but non-supported statements should be considered inappropriately biased.[12]

Hydropower Considerations

"Energy is the lifeblood of the U.S. economy. As our economy continues to grow, so too will the demand for abundant, affordable and reliable sources of energy."[13] Commenting on positive economic indicators, Federal Reserve Board Chairman Alan Greenspan cited the "chronic concern" that rising energy prices could threaten the nation's economic recovery. Greenspan called the positive indicators "scant comfort" and pointed out that all projections point to an "uncertain future."[14] Over the past 25 years, electrical demand in the West rose at nearly twice the rate of the population growth (140% vs. 71%), with the population expected to increase another 54% by the year 2030.[15] Now is not the time to further reduce or continue to unnecessarily restrict generating capacity at Glen Canyon Dam. Hydropower has been labeled the "most successful form of renewable energy."[16] It provides the only way to "store" electricity (in the form of water) for later use. Hydropower has many advantages over other power sources, including the ability to start quickly and adjust to rapid changes, including black start capability, during times of high energy demand and regional system disturbances. Since the power system in the West operates in an integrated manner, any time the load increases or decreases, a regulating generator must sense that change and immediately respond. Glen Canyon generation provides that capability. If Glen Canyon generation is further constrained by maximum and minimum flow and ramp rate releases, this flexibility and resource diversity is reduced. Reduced generation capability also requires the use of other less environmentally desirable resources, which can also raise the cost to consumers due to the need to replace the hydropower resource that is no longer available.

Temperature and Non-Flow Considerations

All options evaluated by the TWG and AMWG include an element of temperature control. One hypothesis is that temperature is a limiting factor that materially affects the humpback chub. The design of an experimental program that tests means by which temperature can be regulated should focus first on options that can be implemented in a manner that protects hydropower generation at Glen Canyon Dam. Technically, there are two controllable ways to achieve that result: by flows or by non-flow (i.e., temperature control device) means. However, the flow-based proposal forwarded by the AMWG ("Option B") is economically infeasible due to its impact to hydropower generation ($175,327,485 net present value of the most probable hydrologic scenario)[17]. If the same result can be achieved through installation of a temperature

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[12] See Table 4.2, GCMRC's Assessment of the Estimated Effects of Four Experimental Options on Resources Below Glen Canyon Dam, October 27, 2006.

[13] House Resources Committee Press Release, January 20, 2004.

[14] Testimony of Chairman Alan Greenspan, *Federal Reserve Board's semiannual Monetary Policy Report to the Congress,* Before the Committee on Financial Services, U.S. House of Representatives, February 11, 2004.

[15] Energy Information Administration, Annual Energy Outlook 2006 with Projections to 2030, http://www.eia.doe.gov/oiaf/aeo/electricity.html (Feb. 2006)

[16] Report of the Energy Policy Development Council, May, 2001 at 5-19.

17 Assessment of the Estimated Effects of Four Experimental Options on Resources Below Glen Canyon Dam, USGS, October 27, 2006, Appendix E, table 12, page 203.

control device at a lower cost, while providing enhanced hydropower generation, that approach should be preferred. In addition, the GCMRC's analysis of Option B indicates that this "option may implement conditions that are favorable for warmwater nonnatives", and "benefits to adult humpback chub are uncertain."[18] Water quality and human health should also be a concern in the Bureau's development of alternatives. With Option B's "lower, more stable flows throughout most years..." concentrations of human pathogens in the water, especially in the shoreline zones near popular campsites, are likely to increase, thereby increasing risks to human health[19]. Notwithstanding the importance of human health and safety, such impacts could negatively affect the economies of the recreational and tourism industry in the region.

In addition to temperature and flow considerations, CREDA recommends the Bureau include non-flow elements in each alternative. Those elements forwarded by the AMWG included control of nonnative cold water fish (only to the extent necessary, recognizing the importance of the sport fishery resource), control of nonnative warm water fish, and parasite research. Additionally, the AMWG's Humpback Chub Ad Hoc Committee has been in the process of developing recommendations for additional conservation and protection of humpback chub, including translocation, refugia, and population augmentation planning. CREDA supports consideration and implementation of those nonflow conservation and management actions directed at improving conditions for the humpback chub.

Thank you for the opportunity to comment during this scoping process.

Sincerely,

/s/ Leslie James

Leslie James
Executive Director

Cc: CREDA Board

[18] Assessment of the Estimated Effects of Four Experimental Options on Resources Below Glen Canyon Dam, USGS, October 27, 2006, page 76.
[19] Ibid, page 56 (Melis and others, 2000b).

From: "Lynn Hamilton" <gcrg@infomagic.net>
To: <GCDExpPlan@uc.usbr.gov>
Date: Wed, Feb 28, 2007 11:32 AM
Subject: Grand Canyon River Guides' comments on LTEP

To: Regional Director, Bureau of Reclamation, Upper Colorado Region

Attached please find Grand Canyon River Guides' official comments on the development of alternatives for a Long Term Experimental Plan. Also attached is another document for suggested use as part of the evaluation criteria (our comments reference these social impact assessment guidelines).

We certainly appreciate the opportunity to comment on the development of these alternatives and hope that our suggestions will be helpful towards that end.

Sincerely,

Lynn Hamilton
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Grand Canyon River Guides scoping comments on the development of alternatives for a Long Term Experimental Plan Environmental Impact Statement

Grand Canyon River Guides, Inc. (GCRG) founded in 1988, works to provide unified voice for commercial river guides and many other river runners in defense of the Colorado River corridor through Grand Canyon. Comprised of over 1,800 individuals, we are passionately dedicated to the conservation of this national icon. We are a non-profit 501(c)(3) educational and environmental organization whose goals are to:

Protect Grand Canyon
Set the highest standards for the river profession
Celebrate the unique spirit of the river community
Provide the best possible river experience.

With these goals in mind, and as a committed, long-term member of the Adaptive Management Work Group, Grand Canyon River Guides offers the following comments to the Environmental Impact Statement on the Long Term Experimental Plan for operations of Glen Canyon Dam and other associated management activities (LTEP).

General comments

- **The National Park Service (NPS) should serve as a joint lead agency for this EIS process.** The Grand Canyon Protection Act of 1992 (GCPA) and this EIS are focused on improving and protecting resources and values of Grand Canyon National Park and Glen Canyon National Recreation Area downstream of Glen Canyon Dam. Therefore, National Park Service involvement should be a central component of the LTEP EIS to comprehensively address park values and resource protection over the long term.

- **The LTEP should serve to re-focus the Adaptive Management Program (AMP) and Department of Interior on ecosystem resources, not program administration.**

GCRG deeply regrets the recent decision by the Secretary of the Interior to cancel a proposed Beach Habitat Building flow. In his memorandum of February 02, 2007, the Secretary's Designee outlined several reasons for cancellation of the BHBF. We were shocked to find that the justification for not implementing a BHBF only involved the need for further planning, compliance and review. No mention was made of the need to protect, mitigate adverse impacts to, and improve resources of the Colorado River in Grand Canyon. Monitoring and research has clearly demonstrated that Beach Habitat Building Flows are the only viable mechanism for conserving sediment in the system, and sediment conservation has been identified as a priority resource that has significantly declined. Clearly, this decision was based solely on administrative criteria, rather than critical resource conditions and needs. We wholeheartedly disagree with this decision, as well as the decision-making process. The LTEP EIS process should serve as a mechanism for re-focusing the decision-making process on responding adaptively to resource conditions based on what we already know, rather than being inhibited by program administration or political maneuvering. The bottom line is that sound science should always inform and direct policy decisions.

- **Funding mechanisms for the AMP should be reevaluated to ensure the effects of the LTEP are meeting the intent of the GCPA.** The level of funding available for monitoring, research and program administration has hindered the ability of the AMP to properly evaluate whether the effects of Glen Canyon Dam operations and other management activities are meeting the intent of the GCPA. The information needs, management objectives and goals of the AMP have been prioritized, based in part, on the amount of money available. Recent planning efforts for the proposed BHBF were guided by the amount of funds available in the Experimental Flow Fund. What happens to the program if there are insufficient funds in the Basin Fund to cover AMP expenditures? New funding mechanisms should be investigated that ensure sufficient funding to evaluate the effects of the preferred LTEP alternative on meeting the intent of the Grand Canyon Protection Act.

- **Investigate the structure and implementation of the adaptive management process.** The Glen Canyon Dam AMP is an experiment of national importance. Yet, there we lack a current assessment of the effectiveness of the program. How can the Glen Canyon Adaptive Management program be improved? Where has the program succeeded? Where has it failed (see BHBF comments above) and what are the impediments? How can the structure of the program be improved to better meet the AMWG charter and the mandates of the Grand Canyon Protection Act? The Department of Interior should initiate an assessment program, perhaps a panel of experts similar to the Protocol Evaluation process used by GCMRC, to ensure that the outcome of this EIS is implemented in the most effective way.

Developing Alternatives

- **Alternatives should be developed that meet the intention of the Grand Canyon Protection Act.** The GCPA stipulates that the protection of downstream environmental,

cultural and recreation values have precedent over power generation as long as operations do not interfere with the allocation of water governed by the Law of the River. In Section VII (Basis of Decision) the 1996 Record of Decision for the Glen Canyon Dam EIS states, *"The goal of selecting a preferred alternative was not to maximize benefits for the most resources, but rather to find an alternative dam operating plan that would permit recovery and long-term sustainability of downstream resources while limiting hydropower capability and flexibility only to the extent necessary to achieve recovery and long term sustainability."* GCRG suggests a similar approach for the LTEP.

- **All LTEP alternatives must be scientifically credible and defensible with well-defined scientific hypotheses**. The Adaptive Management Program, and therefore the LTEP, must provide a scientifically credible framework to continually refine, and if necessary re-operate Glen Canyon Dam so as to meet the primary intent of the GCPA, to develop a systematic and improved understanding of the dam's effects on downstream resources.

- **The LTEP should be based on an adaptive ecosystem management approach.** Adaptive management should build upon knowledge previously gained through extensive monitoring, modeling, and research that adheres with Principle 4 of the AMP Strategic Plan.

- **Alternatives should be in compliance with the Endangered Species Act.** The ESA focuses on preserving and restoring native species in the context of their critical habitat, which in this case, is inextricably affected by a dam-altered system.

- **Alternatives should be in compliance with all existing federal laws in regards to protection of cultural resources and Traditional Cultural Properties, including, but not limited to the National Historic Preservation Act and all associated laws and statutes.** It is imperative that the LTEP achieve AMP objectives for these fragile and non-renewable resources to protect National Register listed or eligible historic properties downstream of Glen Canyon Dam.

- **LTEP alternatives should comply with the Cultural Programmatic Agreement for the AMP as well as the Natural/Cultural and Visitor Use Monitoring Plans currently being developed by Grand Canyon National Park.** Mechanisms should be developed for information sharing to eliminate redundancy while ensuring that all program goals and requirements are being met.

- **A complete range (full spectrum) of scientifically defensible alternatives should be developed, including, but not limited to, the following:**

  1) Seasonally Adjusted Steady Flows. At the close of the Glen Canyon Dam EIS, Grand Canyon River Guides did not support the preferred alternative (MLFF) as we were unconvinced that it would best conserve terrestrial riparian habitat in the canyon, especially in regards to crucial sediment needs. We did support a rigorous test of the SASF alternative to determine whether releases that closely mimic pre-dam flows would

better restore the endangered species and severely eroded beaches. The single test of SASF in the summer of 2000, although informative, was insufficient to determine its effects on the ecosystem. Further testing of this concept is necessary to assess system response and to test the RPA of the U.S. Fish and Wildlife Service.

2) Equalized monthly volumes. GCMRC has shown that variation in monthly release volumes strongly affects sediment erosion and deposition. Yet, we still do not know which monthly volume under ROD releases is optimum for sediment sustainability. This is a testable question that should be pursued in the LTEP in order to determine the most effective annual release patterns.

3) Option "B" from the AMP experimental flow plan. Option B has been vetted by the Science Planning Group and is supported by both Grand Canyon Trust and Grand Canyon River Guides. It adequately tests the SASF hypothesis in a progressive way, which should lead to an understanding of the optimum balance between ecosystem sustainability and hydropower generation.

4) Modified Low Fluctuating Flows The Glen Canyon Dam Record of Decision in 1996 stipulated MLFF flows as the preferred alternative for accomplishing ecosystem goals. Consequently, MLFF should serve as the "base" or "no action" alternative against which all other alternatives can be compared.

- **Sediment-triggered and well-defined Beach Habitat Building Flows should be a common element to all alternatives with specified frequency based on the best scientific data.** Presently, this is the only dam-operated means to achieve the most important AMP goals. Sediment scientists working on this question have recommended that sediment-triggered BHBF's should be conducted whenever the trigger is met in order to determine if episodic high releases can provide long-term sustainability of sediment in the system, and can deposit the sediment where it is most essential for various ecosystem needs.

- **A range of BHBF should be clearly defined that include alternative timing, magnitudes, and durations.** The LTEP should build in some flexibility by testing varying BHBF scenarios rather than being limited to the 41 – 45,000 cfs floods conducted to date. For example if hydrology permits, the LTEP should allow for exceeding those parameters. Although sediment is a profoundly important resource in and of itself, it is also the lynchpin for the health and sustainability of multiple downstream resources. The timing of a BHBF should therefore be carefully evaluated with an eye to maximizing all resource benefits: natural, cultural, and recreational.

- **The Selective Withdrawal Structure (Temperature Control Device) should be actively pursued as a common element to all alternatives, providing temperature control flexibility and improved water quality.** This structural modification will give the dam much more flexibility in its ability to respond to changing ecosystem concerns in future years, as we learn more about the effects of temperature and water quality from a dynamically-changing reservoir on the downstream environment.

- **The LTEP should include a range of options to accommodate minimum, average, and high volume release patterns from Glen Canyon Dam.** Although we are presently in a drought, that could well change during the anticipated duration of the LTEP. The LTEP alternatives should include contingencies for a variety of hydrologic basin conditions.

- **Alternatives should be integrated with the EIS on drought shortage criteria.** LTEP alternatives need to consider the possible constraints of lower monthly or annual release volumes that may result from newly developed criteria for the operation of reservoirs under conditions of long term drought.

Evaluating Alternatives

- **Alternatives should be evaluated on the basis of environmental, social (cultural, recreational), and economic criteria.**

- **Environmental evaluation should be based on an ecosystem approach.**

- **Social impacts should be assessed through a Social Impact Assessment process (SIA).** Social Impact Assessments are a common element of the EIS process (USDI, 2002). Application of the SIA process will directly address recommendations from two National Resource Council (NRC) reviews and ensure that the social and cultural concerns will be included in the decision making process (NRC, 1987, 1999).

- **Economic analyses should incorporate recreational, local and regional economies, non-market values, and hydropower.** Currently hydropower revenues are the only economic evaluation conducted within the AMP. The economic evaluation of dam operations and management actions must be broadened to include the economics impacts of the LTEP on recreation, local and regional economies, and non-market values in order to establish a full evaluative framework. This was also a recommendation from both NRC reviews of the program (NRC, 1987, 1999).

Summary

Grand Canyon River Guides appreciates the opportunity to provide input for this public process as the breadth, quality, and scientific integrity of the Long Term Experimental Plan alternatives will guide dam management for years to come, and could potentially lead to a new ROD and dam re-operation. This LTEP should therefore serve as the catalyst for refocusing the AMP on an adaptive ecosystem management approach that seeks to

"…protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including, but not limited to natural and cultural resources and visitor use." (Grand Canyon Protection Act, Section 1802a, 1992)

Indeed, there are many opportunities presented by the LTEP: to evaluate the effectiveness of the AMP, to craft scientifically credible and defensible alternatives that comply with all existing laws and policies, and to institute rigorous and well-rounded evaluation criteria, while vigilantly adhering to the preservation of park resources and values.

Ultimately, the goal of this Long Term Experimental Plan should be to advance us further along the science-based learning curve towards long term sustainability for the cultural, natural, and recreational resources of the Colorado River corridor downstream of Glen Canyon Dam.

Respectfully,

Grand Canyon River Guides, Inc.

Attachments
Social Impact Assessment Guidelines

References
National Research Council, Commission of Geosciences, Environment, and Resources, Water Science and Technology Board, Committee to Review the Glen Canyon Environmental Studies. 1987, *River and Dam Management: A Review of the Bureau of Reclamation's Glen Canyon Environmental Studies.* Washington DC: National Academy Press.

National Research Council, Commission on Geosciences, Environment, and Resources, Water Science and Technology Board, Committee on Grand Canyon Monitoring and Research. 1999. *Downstream: Adaptive Management of Glen Canyon Dam and the Colorado River Ecosystem.* Washington DC: National Academy Press.

US Bureau of Reclamation (USDI) (2002), *Social Analysis Manual Volume I: Manager's Guide to Using Social Analysis*; *Volume II Social Analyst's Guide to Doing Social Analysis* (Resource Management and Planning Group. Technical Service Center,
Denver Federal Center D-8580, Bldg. 67. Denver, CO 80225-0007).